Claims

What is claimed is:

1. A generic host interface for a data storage device comprising:
a channel select bit encoder to assert one or more channel select bits indicating one or more virtual channels through which the host interface will communicate over a data bus;
a virtual channel controller to establish a peer-to-peer connection with a media controller of the data storage device based on the virtual channel indicated by the one or more channel select bits and perform address-less transfer of data over the data bus; and
a communication controller to implement a communication protocol for communication with a host and transfer data to and from the media controller via the peer-to-peer connection based on the communication with the host.

2. The host interface of claim 1, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer data between the host interface and the media controller.

3. The host interface of claim 1, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer control signals between the host interface and the media controller.

4. The host interface of claim 1, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer side band information between the host interface and the media controller.

5. The host interface of claim 1, wherein the communication controller transfers data to and from the media controller synchronous with a clock in the host controller.

6. The host interface of claim 1, wherein the communication controller transfers data to and from the media controller based on a quadrature handshake model.

7. A data storage device media controller comprising:

a channel select bit decoder to decode one or more channel select bits from a host interface indicating one or more virtual channels through which the media controller will communicate over a data bus with the host interface;

a virtual channel controller to establish a peer-to-peer connection with the host interface based on the virtual channel indicated by the one or more channel select bits and perform address-less transfer of data over the data bus; and

a communication controller to transfer data to and from the host interface via the peer-to-peer connection.

8. The media controller of claim 7, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer data between the host interface and the media controller.

9. The media controller of claim 7, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer control signals between the host interface and the media controller.

10. The media controller of claim 7, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer side band information between the host interface and the media controller.

11. The media controller of claim 7, wherein the communication controller transfers data to and from the host interface synchronous with a clock in the host interface.

12. The media controller of claim 7, wherein the communication controller transfers data to and from the host interface based on a quadrature handshake model.

13. The media controller of claim 7, wherein the media controller limits access to a storage medium of the data storage device through the peer-to-peer connection.

14. The media controller of claim 13, wherein the media controller limits access to the storage medium based on one or more registers relating to each of the one or more virtual channels, in registers indicating a range of addresses on the storage medium that may be accessed via the related virtual channel.

15. A data storage device comprising:

a generic host interface comprising a channel select bit encoder to assert one or more channel select bits indicating one or more virtual channels through which the host interface will communicate over a data bus, a virtual channel controller to establish a peer-to-peer connection based on the virtual channel indicated by the one or more channel select bits and perform address-less transfer of data over the data bus, and a communication controller to implement a communication protocol for communication with a host and transfer data via the peer-to-peer connection based on the communication with the host; and

a media controller comprising a channel select bit decoder to decode the one or more channel select bits from the host interface, a virtual channel controller to establish a peer-to-peer connection with the host interface based on the virtual channel indicated by the one or more channel select bits and perform address-less transfer of data over the data bus, and a communication controller to transfer data to and from the host interface via the peer-to-peer connection.

16. The data storage device of claim 15, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer data between the host interface and the media controller.

17. The data storage device of claim 15, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer control signals between the host interface and the media controller.

18. The data storage device of claim 15, wherein one virtual channel of the one or more virtual channels is used to establish a peer-to-peer connection to transfer side band information between the host interface and the media controller.

19. The data storage device of claim 15, wherein the communication controller of the host interface transfers data to and from the media controller synchronous with a clock in the host controller.

20. The data storage device of claim 15, wherein the communication controller of the host interface transfers data to and from the media controller based on a quadrature handshake model.

21. The data storage device of claim 15, wherein the media controller limits access to a storage medium of the data storage device through the peer-to-peer connection.

22. The data storage device of claim 21, wherein the media controller limits access to the storage medium based on one or more registers relating to each of the one or more virtual channels, in registers indicating a range of addresses on the storage medium that may be accessed via the related virtual channel.